



PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants: Siepel et al.

Examiner: Tran, Lien

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For: INGREDIENTS FOR  
EXPANDED FOODS

Date: November 15, 2006

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.132**

The undersigned, Pieter L. Buwalda of Mondriaanstraat 32, Groningen, the Netherlands, herewith declares as follows:

1. I am a Food Starch Specialist at the Food Competence Center of the international co-operative AVEBE in Foxhol, The Netherlands, the world's largest manufacturers of potato starch derivatives. I took up this position on December 1 of 2001. Before that I was associated with the Chemistry Department of AVEBE for a period of almost twelve years where I performed research on various starch applications, the last five years mainly food oriented. My specialisation is Chemistry of Starch.

I hold a PhD degree in Organic Chemistry from the University of Groningen, the Netherlands, and have written a number of publications and am a co-inventor of various patents relating to Starch Chemistry. In 1997, for instance, I acted as an author on Granular and Molecular Structure of Starch, The 3<sup>rd</sup> CAFST International Symposium, page 109. A list of publications is attached to this declaration.

2. I am co-inventor of the patent application as identified above. The invention of this application is based on the insight that a foodstuff that is prepared with the use of an amylopectin root/tuber starch in a process involving heating to a temperature above the glass transition temperature of the starch exhibits unexpectedly high expansion as compared to a similar foodstuff prepared from regular (i.e. amylose containing) potato starch or amylopectin maize starch (waxy maize). A foodstuff prepared with such a starch moreover has an advantageous texture.

3. I have reviewed the reference "New Possibilities with Amylopectin Potato Starch" by De Vries. De Vries is a general overview of potential applications of isolated amylopectin potato starch. De Vries article compares the characteristics of amylopectin potato starch and natural potato starch.

The statement "the use of amylopectine potato starch leads to less expansion after frying" is a statement regarding a comparison between a product made of amylopectin potato starch and a product made of natural potato starch. In particular, De Vries teaches that use of amylopectin starch in a snack product yields a less expanded product as compared with the use of natural potato starch.

Thus, if a skilled artisan would want to produce a potato foodstuff with greater expansion, he/she would not have used high amylopectin potato starch.

4. The only parameters varied in the examples in Table 2 on page 13 of the specification is the type of starch, the type and amount of cross-linking agents, starch amount, and amount of water used. The levels of sodium bicarbonate and acid sodium pyrophosphate were not varied between the examples.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. Further that these statements were made with the knowledge that willfully false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willfully false statements may jeopardize the validity of the application of any patent issued thereon.

Respectfully submitted,

Dated: \_\_\_\_\_

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Pieter L. Buwalda



# List of Publications

1. Buwalda, Pieter Lykle; Meima, Heine Roelf; Woltjes, Jakob Roelf. **Degraded starch for reversible food gel formation.** Eur. Pat. Appl. (2001), 9 pp. CODEN: EPXXDW EP 1145646 A1 20011017 CAN 135:272227 AN 2001:759568 CAPLUS
2. Buwalda, Pieter Lykle; Bleeker, Ido Pieter; Woltjes, Jakob Roelf; Semeijn, Cindy. **Foodstuff containing discrete starch particles.** PCT Int. Appl. (2000), 47 pp. CODEN: PIXXD2 WO 2000054607 A1 20000921 CAN 133:221881 AN 2000:666555 CAPLUS
3. Siepel, Ugo; Buwalda, Pieter Lykle. **Ingredients for expanded foods.** PCT Int. Appl. (2000), 21 pp. CODEN: PIXXD2 WO 2000054606 A1 20000921 CAN 133:221880 AN 2000:666554 CAPLUS
4. Woltjes, Jakob Roelf; Meima, Heine Roelf; Buwalda, Pieter Lykle. **Composition based on cross-linked starch and depolymerized starch suitable as gelatin replacement.** PCT Int. Appl. (2000), 28 pp. CODEN: PIXXD2 WO 2000044241 A1 20000803 CAN 133:104201 AN 2000:534945 CAPLUS
5. Buwalda, Pieter Lykle; Kesselmans, Ronald Pieter Wilhelmus; Maas, Augustinus Arnoldus Maria; Simonides, Hylke Hotze. **Hydrophobic starch derivatives, their manufacture and uses.** PCT Int. Appl. (2000), 31 pp. CODEN: PIXXD2 WO 2000042076 A1 20000720 CAN 133:121916 AN 2000:493578 CAPLUS
6. Thurkow, Roelfina Willemina Antonia; Buwalda, Pieter Lykle. **Heat-stable high-amylopectin starch for use in baking.** PCT Int. Appl. (2000), 23 pp. CODEN: PIXXD2 WO 2000005973 A1 20000210 CAN 132:136689 AN 2000:98230
7. Buwalda, Pieter Lykle; Guns, Jacobus; Lacroix, Jacques. **Depilatory paint thickener based on starch for hides.** PCT Int. Appl. (2000), 60 pp. CODEN: PIXXD2 WO 2000005420 A1 20000203 CAN 132:124472 AN 2000:85057 CAPLUS
8. Buwalda, Pieter Lykle; Meima, Heine Rolf; Brine, Charles James. **Salt-stable modified starch.** PCT Int. Appl. (2000), 37 pp. CODEN: PIXXD2 WO 2000001251 A1 20000113 CAN 132:77840 AN 2000:34702 CAPLUS
9. van der Huizen, Adri A.; Buwalda, Pieter L.; Wilting, Theo; Pol, Harm; Jekel, Andries P.; Meetsma, Auke; van de Grampel, Johan C. **Preparation of urethane and urea derivatives of (NPCl2)3. Crystal structure of a spirocyclic phosphazene with a phosphacyanuric loop.** Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1994), (4), 577-81. CODEN: JCDBI ISSN:0300-9246. CAN 121:9686 AN 1994:409686
10. Van de Grampel, J. C.; Alberda van Ekenstein, G. O. R.; Baas, J.; Buwalda, P. L.; Jekel, A. P.; Oosting, G. E. **Preparation and polymerization of styrene-, acrylate-, and methacrylate-substituted cyclophosphazenes.** Phosphorus, Sulfur and Silicon and the Related Elements (1992), 64(1-4), 91-8. CODEN: PSSLEC ISSN:1042-6507. CAN 116:256116 AN 1992:256116 CAPLUS
11. Buwalda, Pieter L.; Steenberg, Andre; Oosting, Gerard E.; Van de Grampel, Johan C. **The addition of phosphazeneocuprates to aldehydes and ketones: a new route to gem-organo-substituted cyclotriphosphazenes.** Inorganic Chemistry (1990), 29(14), 2658-63. CODEN: INOCAJ ISSN:0020-1669. CAN 113:78690 AN 1990:478690 CAPLUS

12. Meetsma, A.; Buwalda, P. L.; Van de Grampel, J. C. **Structure of ethyl 2,4,4,6,6-pentachloro-1,3,5,2□5,4□5,6□5-triazatriphosphinine-2-carbamate.** Acta Crystallographica, Section C: Crystal Structure Communications (1990), C46(5), 886-8. CODEN: ACSCEE ISSN:0108-2701. CAN 113:50259 AN 1990:450259 CAPLUS
  
13. Buwalda, Pieter L.; Oosting, Gerard E.; Steenbergen, Andre; Van de Grampel, Johan C. **Gem-Alkylhydroxyalkyltetrachlorocyclotriphosphazenes: synthesis, structure and application as polymer precursors.** Phosphorus, Sulfur and Silicon and the Related Elements (1989), 41(1-2), 155-8. CODEN: PSSLEC ISSN:1042-6507. CAN 111:115577 AN 1989:515577 CAPLUS
  
14. Meetsma, A.; Buwalda, P. L.; Van de Grampel, J. C. **Structure of 4,4,6,6-tetrachloro-2-[ferrocenyl(hydroxy)methyl]-2-isopropyl-1,3,5,2□5,4□5,6□5-triazatriphosphorine.** Acta Crystallographica, Section C: Crystal Structure Communications (1988), C44(1), 58-61. CODEN: ACSCEE ISSN:0108-2701. CAN 108:85676 AN 1988:85676 CAPLUS
  
15. Buwalda, Pieter L.; Van de Grampel, Johan C. **Cyclophosphazenes as nucleophiles: the addition of copper(I) cyclophosphazenes to aldehydes and ketones.** Journal of the Chemical Society, Chemical Communications (1986), (24), 1793-4. CODEN: JCCCAT ISSN:0022-4936. CAN 107:217833 AN 1987:617833 CAPLUS
  
16. Van de Grampel, J. C.; Buwalda, P. L.; Van der Huizen, A. A.; Wilting, T.; Meetsma, A.; Van Bolhuis, F. **New strategies in preparing organo-substituted cyclophosphazenes.** Phosphorus and Sulfur and the Related Elements (1987), 30(1-2), 519-22. CODEN: PREEDF ISSN:0308-664X. CAN 107:198407 AN 1987:598407 CAPLUS
  
17. Witte, F. M.; Buwalda, P. L.; Engberts, J. B. F. N. **Micelle-polymer complexes as studied by the ESR spin probe technique.** Colloid and Polymer Science (1987), 265(1), 42-4. CODEN: CPMSB6 ISSN:0303-402X. CAN 106:120553 AN 1987:120553 CAPLUS